

**ABSTRACT OF THE DISCLOSURE**

A method for quantitative assessment of excision and resynthesis DNA repair capacities of at least one biological medium, which method entails: a) preparing a range of plasmids, each containing distinct DNA lesions, and recovering a supercoiled fraction of each; b) characterizing the lesions; c) depositing the plasmids onto a single support according to a pre-established configuration A, so as to form a functionalized support divided into different pre-established zones  $A_1$  to  $A_x$ , where x is an integer equal to a number of at least one biological medium tested; d) incubating the functionalized support of step c) with various repair solutions, each containing at least one biological medium and a labeled nucleotide triphosphate; e) washing the functionalized support at least once; f) measuring a signal produced by the labeled nucleotide triphosphate; g) recording and quantifying the measured signals and h) determining a ratio of the measured signals relative to a control plasmid jointly deposited.